Cost-savings and flexibility for a new era of growth at City University of Hong Kong

■ NetApp

香港城市大學
City University of Hong Kong

Modernizing a data center and storage platforms to support CityU's expansion and future growth

Led and supported by internationally renowned faculties, City University of Hong Kong (CityU) delivers professional education and problem-driven research to improve people's quality of life in the fast-changing 21st century. As a growing university, CityU now operates 10 schools and 30 departments with approximately 10,000 students, 1,500 faculty staff and 39 research centers, running a few thousand research projects.

In line with the establishment of Hong Kong's first and only veterinary college in 2014, CityU decided to refurbish its data center to create space for more wet laboratories. The university's IT team took this opportunity to modernize the data center, hosting environment, and storage platforms to support CityU's expansion and future growth.

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Manfred Chan
Senior Manager of Computing Services Centre, CityU

Eliminating Costly and Inefficient Storage Silos

CityU's storage and backup facilities are mission-critical for its operation, supporting essential services such as its Student Information System, HR, and Finance. Over the years, these systems had continuously expanded to meet increasing demands for performance, capacity and data protection, gradually creating discrete silos of storage that each needed to be independently managed and monitored.

"Our old data center was comprised of five separate storage systems that were dedicated to different applications," said Manfred Chan, Senior Manager at Computing Services Centre, CityU. "The end result was a bunch of silos that made operations and management more and more complex, with huge staffing, training, and maintenance costs. These old systems also greatly complicated the backup process and required backup operators to carry out tedious operations. We experienced an exceptionally long backup window, which affected our data security and efficiency."

A New Storage Blueprint

The university required a new approach to its storage infrastructure and data management to accelerate overall IT efficiency and increase IT service levels. Manfred and his team outlined a blueprint that included a central storage management system to consolidate all SAN and NAS workloads onto a unified platform, with a high availability Active-Active architecture and real-time synchronization across two data centers. These new systems were designed to comprise high-performance hardware with adaptive, scalable storage management software that would not only accelerate the performance and availability of existing workloads, but also be adaptable and scalable to address new applications and evolving technologies.

After an in-depth study and extensive evaluation, the university finally chose NetApp FAS Hybrid Flash Systems and advanced ONTAP data management with MetroCluster technology.

Simplified Management with Enhanced Availability

The new solutions simplified CityU's storage infrastructure by consolidating its existing workloads of multiple storages into two sets of FAS systems, powered by ONTAP management, separately deployed in two data centers for Active-Active data resiliency. The university also deployed an additional FAS storage for real-time backup and long-term archiving to further enhance data protection and enable business continuity.

"The new systems consolidate our critical workloads from multiple storages into a single platform," said Manfred. "This streamlines our complex data management and optimizes data availability with a real-time, automated backup facility, considerably reducing our daily workloads with enhanced efficiency and data protection."

Great TCO Savings

The new NetApp solutions deliver an array of unsurpassed financial benefits to CityU. Firstly, the capital investment of deploying an all-new NetApp solution was very low, equal to just one year of the old system's maintenance costs. Secondly, NetApp's industry-leading technologies such as inline deduplication, inline compression, thin provisioning, and NetApp Snapshot copies provide unmatchable storage efficiency, greatly reducing the cost per gigabyte of storage. Thirdly, by using ONTAP as a single management system, CityU can make significant manpower savings and assign these resources to higher-value tasks.

"The new solutions have enhanced both our OPEX and CAPEX," said Manfred. "By migrating our legacy systems, we have achieved an 80% saving in TCO, in addition to a 75% saving in physical space. In fact, in terms of our initial investment, NetApp has delivered an incredible price/performance advantage. For a fraction of our previous annual maintenance expenditure, we have modernized our two data centers with all-new solutions that also anticipated future demand."

Nondisruptive Oracle Database and Oracle VM Migration

With a comprehensive set of software and hardware solutions to address even the most stringent requirements for availability and performance in Oracle VM environments, NetApp solutions deliver highly available, zero data-loss solutions for mission-critical Oracle workloads. Indeed, NetApp ONTAP and MetroCluster are purpose-built solutions for Oracle environments.

"Ensuring the smooth migration of our high-volume Oracle Database and Oracle VM was one of the major selection criteria," said Manfred. "NetApp provided professional migration services to ensure a smooth and efficient transition with minimal impact on services and operation. NetApp's services experts have extensive experience in Oracle migration and legacy system modernization, so the migration process only required minimal downtime."

Products

- NetApp FAS Hybrid Flash Systems
- ONTAP data management with MetroCluster

A Solid Future Pathway with Investment Protection

NetApp FAS and ONTAP offer unparalleled flexibility and scalability to support CityU's growth. Moreover, it has the freedom to connect all of this to the cloud, building a hybrid cloud with Amazon AWS, Microsoft Azure, Google Cloud, or any other leading cloud provider.

"Now, we have more than enough capacity and consistent performance to meet our increasing storage needs and maintain customer satisfaction with high quality of services," said Manfred. "With NetApp in place, we are free to embrace growth and innovation. In the short term, we are already planning to extend our storage services to more departmental users. Riding on the technologies bundled from the solution and our team members' efforts, there are many possibilities for the future."

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